

WHAT IS CLAIMED IS:

1. A system for providing general packet radio services (GPRS) to a mobile station, comprising:

a packet network operable to transport packets of information;

5 a database coupled to the packet network and operable to store profile information associated with the mobile station;

a base station operable to communicate with the mobile station over a wireless interface;

10 an access point coupled to the base station and to the packet network, the access point operable to communicate with the mobile station through the base station;

15 a GPRS support node coupled to the packet network and operable to communicate with the access point, the GPRS support node also operable to monitor a location of the mobile station and to route packets of information for the mobile station to the access point; and

an interworking point coupled to the packet network, the interworking point operable to communicate with the GPRS support node using a first protocol and with a public network using a second protocol, the interworking point also operable to interwork between the first protocol and the second protocol.

20 2. The system of Claim 1, wherein the packet network comprises an Internet Protocol network.

25 3. The system of Claim 1, wherein the profile information identifies one or more services available to the mobile station in the system.

4. The system of Claim 3, wherein at least one of the services available to the mobile station in the system is different from the services available to the mobile station in the public network.

30 5. The system of Claim 1, wherein the profile information comprises first profile information; and

wherein the public network comprises a home location register operable to store second profile information associated with the mobile station.

6. The system of Claim 5, wherein the access point is operable to retrieve
5 the first and second profile information, compare the first and second profile information, and provide GPRS service to the mobile station based on the comparison.

7. The system of Claim 5, wherein the GPRS support node is operable to
10 retrieve the first and second profile information, compare the first and second profile information, and provide GPRS service to the mobile station based on the comparison.

8. The system of Claim 1, wherein the access point and the GPRS support
15 node each comprises:

an Internet Protocol layer operable to facilitate communication over the packet network; and

a Network Services Control Protocol layer operable to provide an interface between the Internet Protocol layer and a Base Station System GPRS Protocol layer.

20 9. The system of Claim 1, wherein the access point and the GPRS support node each comprises:

an Internet Protocol layer operable to facilitate communication over the packet network;

25 a Message Transfer Part-3 (MTP-3) User Adaptation protocol layer operable to facilitate generation of MTP-3 messages; and

a Stream Control Transmission Protocol layer operable to facilitate communication of the MTP-3 messages.

30 10. The system of Claim 1, wherein the GPRS support node and the interworking point each comprises:

an Internet Protocol layer operable to facilitate communication over the packet network;

a Message Transfer Part-3 (MTP-3) User Adaptation protocol layer operable to facilitate generation of MTP-3 messages; and

5 a Stream Control Transmission Protocol layer operable to facilitate communication of the MTP-3 messages.

11. The system of Claim 1, wherein the access point and the GPRS support node each comprise:

10 an Internet Protocol layer operable to facilitate communication over the packet network; and

a mobility protocol layer operable to facilitate communication with the database.

15 12. The system of Claim 1, wherein the packet network is further coupled to a second private network.

13. The system of Claim 1, wherein the GPRS support node comprises a serving GPRS support node (SGSN); and

20 further comprising a gateway GPRS support node (GGSN) coupled to the packet network and to an external packet network, the GGSN operable to transmit packets to and receive packets from the SGSN.

25 14. A system for providing general packet radio services (GPRS) to a mobile station, comprising:

a base station operable to communicate with the mobile station over a wireless interface;

30 an access point coupled to the base station, the access point operable to communicate with the mobile station through the base station, the access point also operable to communicate over a packet network;

a database operable to communicate with the access point over the packet network, the database also operable to store profile information associated with the

mobile station, the database further operable to communicate the profile information to the access point and to a GPRS support node, the GPRS support node operable to transmit packets of information to and receive packets from the access point over the packet network, the GPRS support node also operable to communicate with a public network through an interworking point, the interworking point operable to communicate with the GPRS support node using a first protocol and with the public network using a second protocol and to interwork between the first protocol and the second protocol.

10 15. The system of Claim 14, further comprising the packet network coupled to the access point, the GPRS support node, the database, and the interworking point.

15 16. The system of Claim 14, wherein the profile information identifies one or more services available to the mobile station in the system.

20 17. The system of Claim 16, wherein at least one of the services available to the mobile station in the system is different from the services available to the mobile station in the public network.

25 18. The system of Claim 14, wherein the profile information comprises first profile information; and

 wherein the public network comprises a home location register operable to store second profile information associated with the mobile station.

30 19. The system of Claim 18, wherein the access point is operable to retrieve the first and second profile information, compare the first and second profile information, and provide GPRS service to the mobile station based on the comparison.

20. The system of Claim 18, wherein the GPRS support node is operable to retrieve the first and second profile information, compare the first and second

profile information, and provide GPRS service to the mobile station based on the comparison.

21. The system of Claim 14, further comprising the GPRS support node
5 coupled to the packet network.

22. The system of Claim 21, wherein the access point and the GPRS support node each comprises:

an Internet Protocol layer operable to facilitate communication over the packet
10 network; and

a Network Services Control Protocol layer operable to provide an interface between the Internet Protocol layer and a Base Station System GPRS Protocol layer.

23. The system of Claim 21, wherein the access point and the GPRS support node each comprises:

an Internet Protocol layer operable to facilitate communication over the packet network;

a Message Transfer Part-3 (MTP-3) User Adaptation protocol layer operable to facilitate generation of MTP-3 messages; and

20 a Stream Control Transmission Protocol layer operable to facilitate communication of the MTP-3 messages.

24. The system of Claim 21, further comprising the interworking point coupled to the packet network.

25. The system of Claim 24, wherein the GPRS support node and the interworking point each comprises:

an Internet Protocol layer operable to facilitate communication over the packet network;

30 a Message Transfer Part-3 (MTP-3) User Adaptation protocol layer operable to facilitate generation of MTP-3 messages; and

a Stream Control Transmission Protocol layer operable to facilitate communication of the MTP-3 messages.

5 26. The system of Claim 21, wherein the access point and the GPRS support node each comprises:

an Internet Protocol layer operable to facilitate communication over the packet network; and

10 a mobility protocol layer operable to facilitate communication with the database.

15 27. The system of Claim 21, wherein the GPRS support node comprises a serving GPRS support node (SGSN); and

further comprising a gateway GPRS support node (GGSN) coupled to the packet network and to an external packet network, the GGSN operable to transmit data packets to and receive data packets from the SGSN.

20 28. A method for providing general packet radio services (GPRS) to a mobile station in a private network, comprising:

receiving a registration request from the mobile station;

25 receiving from a database first profile information associated with the mobile station, the first profile information also associated with the private network;

receiving from a public network second profile information associated with the mobile station;

comparing the first and second profile information; and

providing GPRS service to the mobile station based on the comparison.

30 29. The method of Claim 28, wherein receiving a registration request from the mobile station comprises receiving a registration request from the mobile station using a first protocol; and

further comprising interworking the request between the first protocol and a second protocol.

30. The method of Claim 29, wherein the first protocol comprises a GPRS Mobility Management protocol.

5 31. The method of Claim 29, wherein the second protocol comprises a mobility protocol used by the database.

32. The method of Claim 29, wherein the second protocol comprises a Mobile Application Part protocol used by a home location register in the public network.

10 33. The method of Claim 28, wherein the first profile information identifies one or more services available to the mobile station in the private network; and

15 wherein the second profile information identifies one or more services available to the mobile station in the public network.

34. The method of Claim 33, wherein at least one of the services available to the mobile station in the private network is different from the services available to the mobile station in the public network.

20 35. The method of Claim 28, wherein an access point receives the first and second profile information.

25 36. The method of Claim 28, wherein a GPRS support node receives the first and second profile information.

37. An access point for providing General Packet Radio Services (GPRS) to a mobile station, comprising:

30 an Internet Protocol layer operable to facilitate communication over a packet network; and

a Network Services Control Protocol layer operable to provide an interface between the Internet Protocol layer and a Base Station System GPRS Protocol layer.

38. A General Packet Radio Services (GPRS) support node for providing GPRS services to a mobile station, comprising:

5 an Internet Protocol layer operable to facilitate communication over a packet network; and

a Network Services Control Protocol layer operable to provide an interface between the Internet Protocol layer and a Base Station System GPRS Protocol layer.

10 39. An access point for providing General Packet Radio Services (GPRS) to a mobile station, comprising:

an Internet Protocol layer operable to facilitate communication over a packet network;

a Message Transfer Part-3 (MTP-3) User Adaptation protocol layer operable to facilitate generation of MTP-3 messages; and

15 a Stream Control Transmission Protocol layer operable to facilitate communication of the MTP-3 messages.

40. A General Packet Radio Services (GPRS) support node for providing GPRS services to a mobile station, comprising:

20 an Internet Protocol layer operable to facilitate communication over a packet network;

a Message Transfer Part-3 (MTP-3) User Adaptation protocol layer operable to facilitate generation of MTP-3 messages; and

25 a Stream Control Transmission Protocol layer operable to facilitate communication of the MTP-3 messages.